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(12) UK Patent Application (19) GB (11) 2 368 047 (13) A

(43) Date of A Publication 24.04.2002

(21) Application No 0016764.3

(22) Date of Filing 08.07.2000

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(51) INT CL⁷

B32B 17/06, B44C 5/04, C03B 23/00

(52) UK CL (Edition T)

B6G GBZ

(56) Documents Cited

GB 2349362 A

(58) Field of Search

UK CL (Edition T) B6G GBZ, C1M MFD MVJ
INT CL⁷ B32B 17/06 18/00, B44C, C03B 23/00 29/00,
C04B

(54) Abstract Title

Textured slumped painted decorative glass tiles

(57) Slumped glass tiles 1 are manufactured by placing tile shaped pieces of glass on ceramic paper 2 in a kiln 6 to slump the glass. The textured surface of the ceramic paper is replicated on the underside 10 of the glass tile providing a keying surface for paint and /or adhesive. The ceramic paper is coated with investrite 4 as release powder. The underside of the tiles are painted with epoxide paint 16 which may have fine sand 18 in it or added after painting the tile. Also various colours can be used on a tile and/or several layers of ceramic paper can be used.

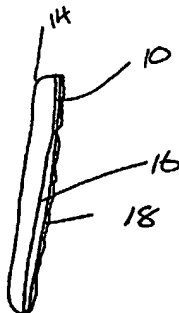


FIGURE 2

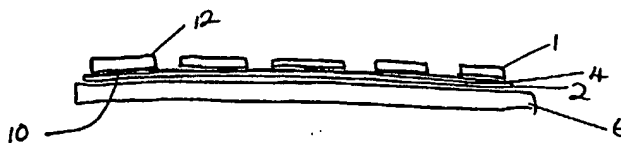


FIGURE 3

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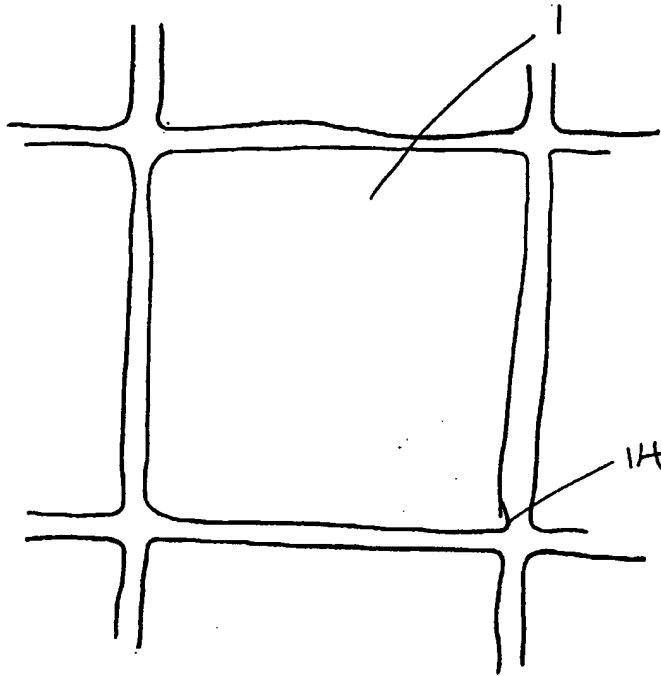


FIGURE 1

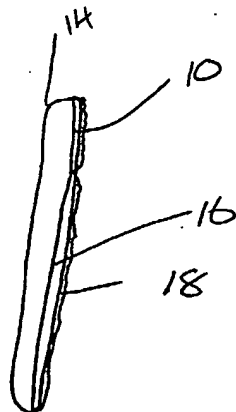


FIGURE 2

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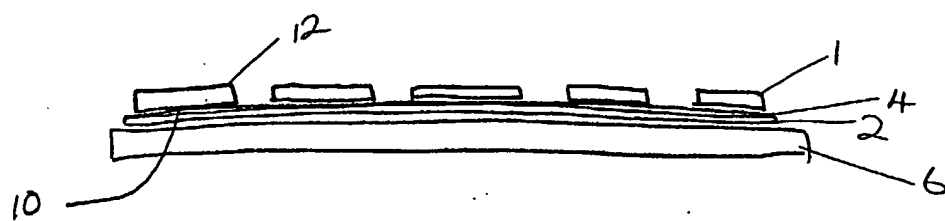


FIGURE 3.

DECORATIVE TILES

The present invention relates to decorative tiles.

5 Conventionally decorative tiles for walls and floors have been of ceramic materials. It is known for them to have dimensional relief and/or to be painted.

 Recently slumped glass has been used to produce tiles with relief. Slumped glass is ordinary glass cut to shape and heated in a kiln. The heating rounds the cut
10 edges of the glass. Relief can be introduced by placing contoured patterns on the kiln shelf beneath the glass, whereby on softening of the glass in the kiln, it slumps over the pattern, reproducing it when cooled and removed from the kiln.

 Glass is commercially available in very few colours. It is not easy to
15 incorporate colour into glass during slumping.

 In my British Patent application No. 9907624.2 I described a decorative tile comprising a tile-sized piece of glass which has been heated in a kiln to slump its front edges at least, the tile being painted on their back surface.

20

 I have now improved the tiles by placing the tile-sized pieces of glass on ceramic paper in the kiln to texture the back surface thereof, the ceramic paper being coated with investrite to prevent adherence of the glass. The textured back surface provides an aesthetically appealing tile and also provides a keying surface on the
25 underside of the tile for painting after firing.

 In addition I paint the back surface with an epoxide paint and fine sand. The epoxide paint, in conjunction with the keying surface on the underside of the tile, bonds strongly to the glass tile, and the sand improves the adherence between the tile
30 and the adhesive used to fix it to a wall in use.

 To help understanding of the invention, a specific embodiment thereof will now be described by way of example and with reference to the accompanying drawings in which:-

Figure 1 is a front view of one tile of the invention set on a wall with further such tiles around it, there being shown broken away;

Figure 2 is a cross-sectional view of one tile before setting; and

Figure 3 is a side view of tiles being heated in a kiln.

5

The tiles 1 shown in Figure 1 and Figure 2 are formed from conventional glass, cut to size. As shown the glass is cut into squares, and these will typically have a dimension of 95 mm or slightly larger.

10 As shown in Figure 3, the pieces of glass 1 are placed onto ceramic paper 2 which is coated in investrite 4 in a kiln 6. The kiln is heated slowly up to a temperature of approximately 800°C. The tiles 1 are then held at this temperature for a period of 15 minutes. The kiln is turned off and allowed to cool and the tiles are removed from the kiln when cool enough to handle. Any residual pieces of ceramic
15 paper 2 are then wiped from the underside 10 of the tile.

Typically the ceramic paper 2 will last for three firings before having to be replaced.

20 The temperature in the kiln causes the glass to soften slightly. This results in the sharp edges 12 of the cut glass being rounded 14, and the lower surface 10 of the glass to take on the texture of the ceramic paper. The grade of ceramic paper will determine the texture of the lower surface of the glass tiles. In addition any irregularities in the cutting of the glass, or the temperature of the kiln will result in
25 further irregularities in the tiles. This is to aesthetic advantage.

After removal from the kiln and cleaning of residual ceramic paper, the underside 10 of the tiles is painted with an epoxide paint 16 and fine sand 18. Either each tile is painted 16 and then covered in fine sand 18, or alternatively the epoxide
30 paint 16 and sand 18 are mixed together and the applied to the underside of the tile. The tiles are then stoved at a temperature of approximately 165°C for a period of approximately 40 minutes. This sets the epoxide paint 16 and ensures that it adheres to the glass tile 1. The irregularities in the back of the tile from the ceramic paper

provide a keying surface for adherence of the paint as well as providing a aesthetically pleasing result.

Once cool the tiles are ready to hung on the wall in this conventional manner.

- 5 However, in conventional ceramic tiles, the ceramic is porous and absorbs moisture from the adhesive speeding up the drying time. As the glass in my tiles is not absorbent, this reduction in drying time is not achieved. As a result, when using conventional cementitious adhesive, drying times of 10-14 days have been experienced. I therefore recommend the use of either an epoxide based adhesive,
10 which goes off by reaction of components and does not require the removal of water, or a quick drying cementitious adhesive.

- The invention is not intended to be restricted to the details of the above described embodiment. For instance various colours of paint can be used, either
15 separately or on the same tile. In addition, several layers of ceramic paper can be used in a particular shape to give further relief on the back of the tile.

CLAIMS

1. A method of manufacturing glass tiles comprising placing tile sized pieces of glass on ceramic paper in a kiln and heating to slump the glass, such that the ceramic paper produces a texture on an underside of the glass tile.
- 5 2. A method of manufacturing glass tiles as claimed in claim 1, wherein the ceramic paper is coated in investrite.
3. A method of manufacturing glass tiles as claimed in claim 1 or claim 2, wherein the kiln is heated to a temperature of approximately 800°C.
4. A method of manufacturing glass tiles as claimed in claim 3, wherein the kiln
10 temperature is held for a period of 15 minutes.
5. A method of manufacturing glass tiles as claimed in any preceding claim, further comprising painting the underside with epoxide paint and sand.
6. A method of manufacture glass tiles as claimed in claim 5, wherein the epoxide paint is applied to the underside of the tile, which is then coated in sand.
- 15 7. A method of manufacturing glass tiles as claimed in claim 5, wherein the epoxide paint and sand are mixed before being applied to the underside of the tile.
8. A method of manufacturing glass tiles as claimed in claim 5, claim 6, or claim 7, wherein after painting the tiles are heated in a kiln to set the paint.
9. A method of manufacturing glass tiles as claimed in claim 8, wherein the kiln
20 is heated to 165°C and held at that temperature for a period of 40 minutes.
10. A tile as produced according to any one of claims 1 to 9.
11. A method of manufacturing glass tile substantially as hereinbefore described with reference to Figures 1 to 3 of the accompanying drawings.
12. A tile substantially as hereinbefore described with reference to Figure 1 to 3 of
25 the accompanying drawings.



Application No: GB 0016764.3
Claims searched: 1 - 10

Examiner: David P Maskery
Date of search: 15 February 2002

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:
UK Cl (Ed.T): B6G (GBZ), C1M (MFD, MVJ)
Int Cl (Ed.7): B32B (17/06, 18/00), B44C, C03B (23/00, 29/00), C04B
Other: Online: EPODOC, JAPIO, WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 2349362 A (MURPHY)	

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
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